



City of Tucson
Information Technology Plan

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Information Technology Plan JULY 2010

INTRODUCTION

Technology planning is challenging under most circumstances, and it is particularly so during difficult economic times. This plan will not specify many expenditures or complicated projects, as it is clear that the funds will not be available over the next two to three years. However, this plan will move the department forward in the eventual direction that would be most advantageous to the City and also identifies the amount of "catch-up" that will need to be funded in the future.

During the next two to three years, the Information Technology (IT) Department will focus on covering the very basics of our service delivery. Most of the effort will be applied to maintenance of the current environment, applications, and service delivery. There is very little staff and monetary capacity to tackle new efforts. But during this time, we can do as much positioning as possible with continued consolidation of efforts, and refinement of our internal processes.

For the past three years, IT has reduced its budget, along with all other departments. The greatest reductions have been in the replacement of equipment. Much of our equipment is now beyond its useful life cycle. This is further discussed later in the Plan.

The City is placing renewed emphasis on communication to the community. The Public Communications Division is very instrumental in providing content, approach, and venues for these communications. The content aspect of their work is covered in the City Communications Plan. The technology associated with delivering this communication is included as well.

The use of technology is pervasive within the City and in support of services to the public. Technology is an enabler of City functions so that those functions can be provided more effectively, more efficiently, to a greater degree, and/or in a totally new fashion that increases revenue or reduces costs. The City does not always save money by reducing the use of technology. With the trend for more online services, along with City departments asking for improvements in their technology to enable them to provide services with reduced resources, it may be appropriate to sufficiently fund the IT Department so that this Plan can be followed.

IT's mission applies to all components of the department.

By partnering with others, lead in the effective use of technology for accessible information and responsive government services.

PRINCIPLES

Underlying principles are essential to guide the City's approach to technology. As used in this Plan, a principle gives explicit direction and prompts action by its inherent meaning. Used in this context, a principle is a statement that applies to, and is appropriate for, today's circumstances and environment. If the circumstances or environment were to change, it's possible that an argument could be made to also change the principle to accommodate the evolving needs of a new scenario. The following are the principles of the City's Technology Plan:

- The hierarchy of City technology priorities is (1) serving the public, (2) increasing financial benefit, (3) facilitating interdepartmental productivity, and (4) enhancing single departmental efficiency.
- All technology (hardware, software, communications, and databases) will comply with
 City standards and be shared across departments and functions as appropriate. The
 number and types of technology should be minimized to optimize costs and support.
 Mature technologies (after the initial five-year maintenance period expires) will be
 reviewed for viability and sustainability at least once every three years.
- Information (data) is a City asset. Most City data must be sharable. Therefore, responsibility for data monitoring should rest with a single department so that data is clearly defined, appropriately secured, reliably sourced, appropriately accessed, and has internal integrity. Data is to be made available to the public as appropriate.
- Open source solutions will be investigated before commercial software is evaluated.
 Where possible we will purchase pre-packaged "off-the-shelf" software applications.
 We will minimize customization in order to reduce costs.
- Technology functions neither unique nor critical to the City's mission or direct delivery
 of service should be considered for an outsourced managed services/hosted
 solution.
- There should be a single point of entry into the electronic services for citizens so they
 can deal with the City simply and predictably, accessing the information and
 processes that they need.
- If there is an enterprise application for a particular function, all departments should use that application unless it can be shown that the enterprise application cannot meet their critical needs.

CITY OBJECTIVES

The Information Technology Department provides support to the five City objectives:

Serve Neighborhoods/Engage Citizens

Effective application systems allow the citizens to interact with the City in a more streamlined manner.

Run the Business/Enhance Service Delivery

Many applications are very old, often redundant, and not integrated, so business processes are cumbersome. New integrated systems would address this.

Environmental Integrity/Long-term Human Need

Effective web-based systems will allow citizens to conduct business with the City from their homes having a beneficial environmental impact.

Improve our Bottom Line/Economy

Expenditures on IT can save money and enable effectiveness and new services. Technology applications serve as leverage for departments, allowing their budget and personnel to be repurposed.

Enable Employees/Promote Leadership

With appropriate systems, the City can do analysis and make more informed decisions.

A table matching projects against objectives is in Appendix A.

UNDERLYING THEMES

Some themes are consistent through all components of the IT organization. The current circumstances of financial constraint have led to the rise of some; others are prompted by on-going changes in technology. These themes do not necessarily represent directions, goals, or projects for this planning period. But they are pervasive through all the activities of the department. They are identified so that the context is clear for the extent and tenor of the division activities.

Funding

About one third of IT's current budget is non-discretionary as it is applied to fixed costs of essential hardware maintenance and software licensing, rent, building expenses, and utilities. Another 60% is associated with personnel costs. The remaining budget, approximately 10%, is barely sufficient to carry the operating expenses of a large department much less the requirements of a technology department.

As budgets were reduced, IT cut back on, and in some cases eliminated, the replacement of equipment, and also reduced covered services in maintenance contracts. Thus much of our hardware is past its useful life, is close to being out of support from the prime vendor, and is likely to fail more

frequently and/or cost more to repair. There have been no personal computer replacements over the last two years. Due to overall staffing reductions across the City, excess PCs have been available for redistribution and although these PCs are not new, some are more recent than the oldest in the City. The aerial fiber for the City's network is also reaching end of life and all 500 miles must be replaced over the next five to ten years. In summary, there is a backlog of needed replacements and this has not only affected our ability to provide service to the City, it is a looming expense that must be managed over the next three years or so. Appendix B shows the deferred replacement expenses.

Along with every other department the IT staffing level has been reduced: in IT's case 30% to date. In addition, 30% of the remaining staff are/will be eligible to retire within the next two years. Staff resources are severely stretched to maintain ongoing service with very little capacity for new projects. Also, with the reduction in travel and training budgets, we have been unable to deliver the training to staff to stay current, to build redundancy in support capability, and to reduce single points of failure.

When new projects are introduced, IT asks for an estimate of the costs over five years so that we are prepared to support the associated systems beyond the initial implementation period. This funding has not always happened and budget allocations have not kept pace with the required maintenance of software and hardware, nor has the appropriate level of staffing.

Process Improvement

IT has adopted the Information Technology Infrastructure Library (ITIL) set of best practices as our approach to process improvement. We will continue to implement and expand these best practices to all our internal processes and interactions with City departments.

Standardization

The greater the variety of applications, operating systems, hardware platforms, tools, etc. the greater the need for a variety of skills and training in staff. Standardization and elimination of redundant applications, systems, platforms, and tools will allow IT staff to become expert in a few key areas and support in greater depth the reduced number of products. This multiplicity of products occurs across all areas of the department, and all our customers. A key focus for the future is reduction of this variety, and attendant standardization of technology and business applications.

Risk Mitigation

There are many kinds of risk that IT must manage – technology obsolescence, physical access, external hacking/virus attacks, loss of critical data through poor practices or theft, funding gaps that lead to reduced support coverage, single points of failure through isolated staff knowledge, or lack of redundant technology. Risk mitigation is continually addressed in each of the functional areas.

Security

Security is a risk and thus included in the above topic. But it is such a pervasive risk that IT is addressing it separately. Over the past year, the department has focused a group of people into our Security Team. To date this group has been primarily focused on external security breaches. However, increased emphasis must be placed on data security.

KEY PROJECTS

Over the next two years, there will be only a few new initiatives that the department will have the capability to support. The following projects are acknowledged to be the major efforts. As currently funded, IT will not have the appropriate resources to apply to these projects. Any additional projects will need to be externally funded and staffed or one of these projects must be cancelled. Several of these projects will also require external staff to augment IT staff.

Integrated administrative system – This project covers the functions of payroll, finance, budget, human resources, and procurement at a minimum. The intent is to consolidate all of these functions onto one application platform to enhance integration and streamline support. This project is important not only for the efficiency of the City, but is also needed to support compliance with Arizona House Bill 2282 that calls for a comprehensive database of City receipts and expenditures to be available on the City's web site by January 2013. The immediate need is a replacement of the aging payroll system, so that will be the first priority in the implementation schedule.

Consolidation of Data Centers – This project is partially funded by a Department of Energy grant and will consolidate four data centers into one in the IT building. In addition, the previous data center at Police Headquarters will become a backup data center for critical applications.

New Public Safety CAD/RMS – This project will replace outdated Fire and Police dispatch and reporting systems with a new integrated system that will serve both agencies. This application will need more staffing than currently available when implementation is complete.

COT Web Restructuring – The restructure of the City's internet architecture and navigation will allow for a new look and feel for the entire site within a web content management system. The addition of social media and web applications are included in this project.

Coordination of GIS across City – GIS will continue the transition to a City function rather than independent departmental functions.

Planning for IPv6 – The internet will soon exhaust the number of individual addresses under version 4 of the internet protocol. The conversion to IPv6 is underway around the world. The Networks Division will solidify the plan to convert the City to this new protocol.

PCWIN – the Pima County Wireless Integrated Network project continues in cooperation with the County and neighboring jurisdictions. This will provide an interoperable radio network for public safety.

Email and Calendaring – The current system is approaching end-of-life support and a replacement system will be easier to use and less expensive.

Security Compliance – Considerations for data compliance are increasing because of federal security regulations and the escalation of malicious attacks seeking personal information. This is a multi-year project to establish a robust network and data security environment.

DEFERRED PROJECTS

There are several projects that will be deferred indefinitely. Addressing any or all of them would be helpful to IT and to the City, but there are no staffing or budget resources to proceed.

<u>Disaster Recovery</u> – a minimal plan is in place, but a redundant data center with replicated storage of business files is needed

<u>Fiber Replacement</u> – the City's fiber network is approaching the recommended ten-year life span. The entire network will need to be replaced over the next five or so years.

<u>Lifecycle Replacement</u> – the desktop computers, servers, network switches, and routers are all aging and some are well past the recommended life span. Replacements have been deferred in order to meet budget constraints. This will be a major expense in time.

<u>Mobile Technology</u> – The City is using mobile technology beyond Public Safety applications and IT needs to develop a strategy and associated implementation plan. Today there are multiple technologies, and effectiveness and cost are not optimized.

<u>E-mail Archiving</u> – Retrieval of e-mail to support public records requests is extremely awkward and time consuming now. An archiving system would simplify the process and assure that the City is able to respond to requests and legal holds.

FUNCTIONAL PLANS

The functional areas noted below are not an exact replica of the organization chart, but do reflect the major functions of the department.

Applications

Applications is comprised of three separate divisions with support teams focusing on Public Works, Public Safety, and citywide systems. These teams manage the IT business relationships with all City departments by providing analysis, development, implementation, and support for both departmental and citywide software applications. In addition, they are also responsible for managing technical standards related to software and data purchased for or created by the City.

In today's environment, Applications groups are faced with a myriad of redundant applications and non-integrated systems. While these applications and systems allow users and departments to

perform very similar tasks, each application provides a different mechanism or technology to complete the task. Because the applications are not integrated, custom interfaces are often required to achieve any sharing of data. This environment requires a high staffing level to support and currently absorbs approximately 80% of the division's resources.

Design and operational standards are key components to the effectiveness of the Applications groups. Whether the standards apply to databases, development languages, specific applications, or enterprise wide systems these standards help limit the number of technologies supported. This allows Applications teams to provide the same level of support with fewer resources. Likewise, management and availability of the City's data is also simplified.

Key initiatives support City functions and/or internal IT. Requests from departments will be evaluated in terms of necessity and resource utilization. Likewise, internal IT projects will be evaluated in terms of how completing the project will increase IT responsiveness to City departments. Project priorities will be determined out of that evaluation.

- CAD/RMS replacement of current system.
 Funding for this system is in place. A product has been chosen through an RFP process. The project will extend for two years. Extensive vendor support will be necessary for the implementation.
- Administrative Integrated System
 Funding has been secured for at least a portion of this project; the current recommendation is to upgrade our current product suite. All functions except procurement currently use a CGI/AMS module. Thus HR, payroll, finance and budget systems would be upgraded and procurement functions would be converted. Payroll is the priority. If this project proceeds, the majority of the technical implementation effort must be provided by the vendor or contracted resources, as IT does not have sufficient staff to support implementation. The consolidation of the administrative functions onto one integrated system will bring numerous benefits to the City and to IT in the support of such systems.
- TPD TeleStaff

TPD is looking to use TeleStaff for their scheduling and payroll submittal. TPD has funding for this project but the primary focus for IT will be maintenance on the current systems. The CAD/RMS project will be top priority and will be a factor in the ability to move forward with TeleStaff.

- Fuel System replacement of the current system
 Fleet Services is looking at upgrading the current fuel system. This project does not have resources assigned and will need vendor resources to assist in implementation.
- CMDB Configuration Management Database
 This is an internal data base for IT's use that relates configuration items such as hardware and applications and thus brings relevant information to decisions on upgrades and troubleshooting.
- Water Hydraulic Modeling replacement of the current system
 Tucson Water is looking to replace the current hydraulic modeling system. This project will primarily be a Tucson Water department project. IT will have resources available in an advisory and support role.

- Permits Plus investigate replacement/upgrade
 Permits Plus, the City's permitting application, is not expected to be replaced for several years; however, Planning & Development Services would like to begin the process for exploring possible replacements.
- Sign Code migrate functionality to PermitsPlus
 A homegrown application, Sign Code is approaching the need for a complete re-write. To make
 matters worse, few people in Planning & Development Services know this application. Migrating
 the Sign Code application functionality into PermitsPlus will make it easier for the department to
 issue and manage sign permits.

Networks

The City network is the collection of wired and wireless networks that support the transport of voice, video, and data. Specifically, today, the network composes the following elements:

Optical Fiber. The City owns and operates an optical fiber network that connects most City facilities with over 500 miles of fiber optic cable. The main rings of this optical fiber network use SONET for redundancy and resiliency with circuits around the ring configured as OC-48, OC-12, and Gigabit Ethernet.

<u>Wireless Links</u>. Wireless links are subdivided into the following categories:

Microwave: The City owns and manages a digital OC-3 microwave system. This system is used for point-to-point communications for public safety and public service radio communications and some data communications into the City network from remote sites.

Radio: The City uses an analog radio network to support public safety and public service voice communications. The current County PCWIN project will create a regional interoperable public safety voice system. The project will provide a public service radio function at additional costs. The City must address this operational need with other technology or commit to PCWIN and the associated expense.

Wireless and wireless hot spots: The City has a wireless mesh network that provides coverage along the City's major streets. This network is used mostly by the ER-Link application, medical response, and to communicate with traffic signals. The network has been architected to provide connectivity for these specific applications, which has limited its use. A number of secure wireless hot spots have been implemented at a number of City and County facilities. These hotspots are mostly used by TFD and TPD.

Key Initiatives are:

- IPv6
 All new equipment supports IPv6; the transition will occur over time.
- PCWIN
 IT's role is to support the City's infrastructure of fiber, microwave, and towers that will be part of PCWIN.

Replacement of Fiber

Funding is not in place for this project. It will take several years to accomplish but it cannot be delayed indefinitely. Capacity and quality of the fiber is already reduced due to age and deterioration.

Connection of TUSD to City Fiber

The City has entered into an agreement with the Tucson Unified School District to connect several of their schools to the City's fiber. This will give the schools increased bandwidth at a very reasonable cost.

Servers and Operations

The server and operations environments support all City-hosted software applications. This includes the major, mission critical systems (e.g. Payroll, Finance, Public Safety CAD, the Web, Water and Environmental Services billing, Email, Tax Revenue) as well as small applications that support single groups or departments. They also support the hardware and software that are usually invisible to users, but are essential to ensuring that the City data and applications are protected (including anti-virus/security, anti-spam/anti-malware, back-ups, monitoring, and other Data Center hardware and software).

The City currently has close to 500 servers for production, test, development, and redundant hardware. They span multiple platforms and operating systems including mainframe, AS400, Unix, Microsoft, Novell, and multiple versions of Linux. The servers and operating platforms require a great deal of peripheral equipment (tape drives, tape back-up units, fiber switches, load balancers, and antispam appliances).

Operationally, we currently support four full Data Centers and all the infrastructural equipment required to keep these sites running (including UPS and PDU units, air conditioners, chillers, and fire prevention).

This brief summary of the servers and operations brings to the fore the need to focus on the aforementioned themes, and ways to implement more efficient and cost-effective architecture and technologies.

Architecture:

The following are a few architectural strategies currently being pursued to deal with skyrocketing costs as well as the rapid proliferation of hardware and supporting software.

Server Virtualization. The cost of maintaining, supporting, and replacing hardware has become prohibitive. Server virtualization will allow us to consolidate multiple servers into single physical units, thus allowing us to reduce the number of servers and to reduce the power consumption requirements.

Cross Platform / Consolidated Storage. Instead of maintaining multiple storage devices dedicated to each server and operating system, centralized and consolidated storage will allow us to support

multiple platforms from the same storage devices and management interface, reducing the number of physical devices and the number of staff required to administer storage. It also facilitates ensuring data security and availability.

Cross Platform Backup Hardware / Software solutions. We currently use and support more than seven back-up software systems and back-up hardware devices that are unique to specific operating systems and applications. Further, there are multiple instances of the same software packages in different Data Centers (e.g., we have dedicated licenses and hardware for Backup Exec in three different Data Centers). We can realize significant savings by consolidating onto one back-up software solution for all platforms. This would also permit staffing efficiencies, as we would not require dedicated expertise on each platform. Coupled with strategies like de-duplication (a type of data compression), we can utilize less storage and tape capacity.

Data Collocation and De-duplication. As we focus more on document imaging and reducing dependence on paper documents, it is essential that we maintain copies of the data at a different site to avoid potential loss or corruption of data, and to offer some degree of disaster recovery. Deduplication will help us utilize less storage for the second set of data and facilitate backups.

High Availability. As applications are migrated away from larger, more robust hardware on to a more affordable Microsoft platform, we must focus on ensuring that mission critical applications are available with minimal amounts of downtime. This means high availability strategies (e.g., using load balancers, clustering, etc.) should be deployed.

Key Initiatives include:

- Server Virtualization Partially funded by a DOE grant.
- Migration to Active Directory This will allow us to replace the Novell environment with a Microsoft environment. Most new applications now being implemented require Microsoft authentication. In addition to the benefits of consolidation (less hardware, fewer operating platforms to support, etc.), the environment will be less costly to operate for the City.
- Maintenance RFP

In order to drive down the cost of maintenance, consolidate all maintenance contracts for all platforms and issue an RFP to all existing hardware maintenance suppliers.

- Consolidate backup solutions (discussed under architecture).
- Consolidate storage solutions (discussed under architecture).

Desktop and Mobile Computing

The Desktop Computing environment refers to the hardware and software of the desktop computers used for general office functions and applications access, including printers and end-user support. Support of the desktop environment is performed over-the-phone and in person, with many functions being performed remotely or in an automated fashion.

Key Desktop Initiatives are:

- Transition to an enterprise agreement with Microsoft that will cover upgrades of operating systems and Office products as new versions are released.
- Standardized computer configurations for office use.
- Exploring next-generation solutions that will increase functionality and reduce costs.
- Upgrading to current platforms. This will eliminate the security risk from unsupported PC functions.

The Mobile Computing environment focuses heavily on public safety, with approximately 700 heavily customized computers located in police cars, fire trucks, and medical response vehicles. These machines have redundant communications, high security, and face unique physical and environmental challenges. The integration of computer support systems into the vehicles requires significant design and support challenges.

Key Mobile Computing Initiatives:

- Standardization of models to reduce support requirements and creation of a plan for future purchases and support.
- Updating in-vehicle equipment that is severely beyond its current life cycle. The new CAD system mandates that over two-thirds of Police PCs be replaced in FY11.
- Complying with new mandates regarding security.
- Integration of police and fire in-vehicle support.

GIS

The City's enterprise Geographic Information System (GIS) is used to maintain, display, and analyze data and make the relationships between data easier to understand. The IT GIS Services Division promotes the efficient use of GIS throughout the City by providing training, application development, database administration, and license management. The IT GIS Services Division also serves as a resource to help departments develop their GIS capabilities with the goal of enabling them to maintain their own GIS data.

Education

The ability to perform spatial analysis and display the results graphically, i.e. as a map, makes GIS very powerful. Educating staff about how GIS can be used with other business systems to combine and display data in new ways will be an ongoing challenge.

GIS System Architecture

GIS within the City is currently run on systems that were designed based on the needs of single departments. Architecting a GIS that is capable of serving the needs of the City as a whole will allow redundant hardware to be re-purposed and focus the maintenance of hardware and software on the professional IT staff.

Data Standards and Stewardship

Data standards and stewardship encompasses data maintenance, data distribution, change control, and metadata. Lack of centralized data storage architecture has resulted in GIS data being created

without documentation regarding its intended or appropriate use. In some cases, useful data has been created for a one-time need and then no longer maintained, even though it is useful to departments other than the one that created it. In worst-case scenarios, departments are using stale data without their knowledge.

Centralized Data Storage

Advances in GIS technology and an increased level of skill maintaining enterprise level databases now make it possible to maintain most, if not all, of the City's enterprise level GIS data in a geodatabase rather than an assortment of storage formats. Centralized storage is desirable because it simplifies the security and recoverability of the data; it also allows the data to be maintained in a single location, while still being accessible to all the various users and applications that rely on the data.

Goals

The GIS Services Group will have the following goals: 1) Continue to move toward a city-centric rather than department-centric GIS; 2) Promote cooperation between departments to make their spatial data more readily accessible; 3) Identify ways to improve business processes between departments through the use of GIS; and 4) Simplify processes for maintaining and delivering GIS data.

Key Initiatives:

- Combine all City geo-databases into a single platform.
- Move all web-based mapping applications to ArcGIS Server.
- Consolidate GIS data storage and delivery to allow elimination of redundant hardware.
- Design GIS hardware and data storage architecture.
- Identify orphan GIS data and encourage appropriate department to maintain the data and metadata.
- Create City GIS data portal.

Security

The IT security function provides a safe computing environment while addressing the special access requirements for specific types of protected data, as defined by law. It covers all restricted data and access to it for the entire City.

Architecture

The City's security architecture provides defense in depth, with redundant levels of protection for restricted data or functions.

Network Layer. This establishes and maintains protection against intrusion, denial of service, and other external threats. This includes monitoring network traffic and internet content for violations of guidelines.

Hardware Layer. Addresses security patches, configuration, lock downs, agents, security scans, and antivirus and malware protection.

Application Layer. Enforces secure passwords, granular access control, and protection for source code and services; includes two-factor identity verification.

Database Layer. Field and database level encryption of protected data and passwords, vulnerability scans.

Policy Layer. Delineates the controls and procedures that are required to meet data security guidelines at the federal, state, and municipal levels.

Key Initiatives:

- Creation of citywide security program.
- Identity authentication via token-based systems.
- Development of standards for data encryption of restricted data.
- Development of ongoing compliance programs for HIPAA, CJIS, HITECH, Red Flag, etc.
- Updating of current Security AD.

CitiCommunications

CitiCommunications is the division that provides information to the community about the City. Functions included are the Public Information Office, Citigraphics, and Channel 12. The City's web site is also an integral part of communications delivery and although the web group is organized within Applications, they work very closely with CitiCommunications team members.

Key Initiatives:

- Refine the integration of the various content creation and delivery approaches so that the essential messages of the City are developed and deployed effectively.
- Determine a long-term location for this division, specifically Channel 12.
- Explore degree of relationship and integration with Arizona Public Media on video activities.
- Extend the use of social media and develop citywide protocols for communication with the general media and the public through these avenues.
- Establish internal procedures that support a project-oriented approach to messaging including: development of messages and responses to inquiries, and that material in graphics, video, and web formats are all coordinated.

Management

The management team of IT consists of the director, deputy director, and heads of the divisions. The extended management team includes all those with management/supervisory responsibilities. The current organization chart is in Appendix C. The structure of IT must continue to be fluid so that staff can be aligned with needs within budget constraints. The Public Safety IT Division is severely understaffed and it may be necessary to move staff from other groups to supplement. This would be

detrimental to the originating group but may be in the best interests of the City. Also, if there are any reductions in staff due to retirements, vacancies, or lay-offs, an evaluation of this structure will be done, likely resulting in changes.

There are six administrative directives that cover IT's responsibilities.

- ➤ AD 1.02-7 Information Technology Investment Review
- ➤ AD 1.02-13 City of Tucson Cable Television Policy
- AD 1.08-2 Communications and other Electronic Equipment
- ➤ AD 1.08-3 Information Security Policy
- ➤ AD 1.08-4 Use of Electronic Communication Systems
- ➤ AD 1.08-5 City Web Site

Additional directives are to be developed regarding media communications and required internal use of services including graphics design and video production.

Key Initiatives:

The challenge for management is to prepare the IT Department and the City for the impacts of a reduced organization. The departmental goals are reflective of this challenge. In particular, the management team will:

- Continue and refine time keeping—by project—of the entire IT staff. This allows a better assessment of actual effort needed for support of projects and maintenance.
- Emphasize the Configuration Management Database, Change Control, and Incident Management components of ITIL.
- Explicitly control the priority list of projects so that IT staff applies effort to only prioritized projects and City departments understand the scope of work that IT will undertake on their behalf.
- Report to customers on a regular basis as to status of current projects.

CONSEQUENCES

The work that IT will do for the City will have many benefits, but there are lost opportunities because of the work that will not get done.

The City is falling further behind the technology curve. Not only is our equipment aging, with no replacement cycle funding on the near horizon, the skill sets of the staff are also aging. Just as COBOL is an almost obsolete programming language, the tools we are using now will soon be as prominent in the IT industry as COBOL. This will make it difficult to hire staff with the needed skills and will discourage current employees as their skills become more and more outdated.

The deferred equipment replacement costs will soon need to be addressed. Some of the servers are eight or more years old where three to five years is a recommended life span. This will be a big bubble of expenses to flow through the budget.

Because of staffing limitations, we will have to include in new implementation projects significant support from the vendor. This will be much more costly than if we could rely on internal staff and we will have only a minimal level of knowledge transfer from the consultants to staff. This lack of in-depth knowledge of new software products will make it more difficult for staff to support and will lead to the need for return consultant visits to handle upgrades.

Departments are asking IT to help with more technology and revision of tools, so that the department can be productive with fewer people. Sometimes new applications just appear with out prior consultation. IT cannot support these additional requests and thus the City is missing opportunities to be efficient and to provide better service to the community.

CONCLUSION

This will be a difficult two to three year period, and the plan as outlined in this document may need to be adjusted frequently in order to stay aligned with staffing and budget. IT would like to be proposing a grand strategic direction, but this is not the time for a plan that looks far into the future. The department will continue to take advantage of any opportunities that arise while at the same time positioning the organization to be ready to move forward when the economic situation improves.

Following are the Appendices included with this Plan

Appendix A - City Objectives and IT Projects

Appendix B - Replacement Needs

Appendix C - Organization Chart

APPENDIX A - CITY OBJECTIVES AND IT PROJECTS

Project	Engage Citizens	Run the Business	Environmental Integrity	Improve Bottom Line	Enable Employees
Integrated Administrative System					
Consolidation of Data Centers			1		
Public Safety CAD/RMS			/		
Web Internet Restructure					
Coordination of GIS					
Planning for IPv6					
PCWIN					
E-mail and calendaring			/		
TPD TeleStaff					
Fleet Services Fuel System replacement					
Configuration Management Data Base					
Permits Plus Replacement Evaluation					
Address Master Development					
Connection of TUSD to City Fiber					
Data Center Server Virtualization					
Migration to Active Directory					

Project	Engage Citizens	Run the Business	Environmental Integrity	Improve Bottom Line	Enable Employees
Cross Platform Consolidated Storage					
Cross Platform Backup Solutions					
Consolidation of Hardware Maintenance Contract					
Enterprise Agreement with Microsoft				/	
Standardize Desktop and Mobile Computer Configurations		√			
Combine City Geo-databases onto a single platform		√			
Consolidate web mapping to ArcGIS		1			
Create GIS portal on web			√		
Design city wide security program					
Integrate all aspects of external communication for complete service to City departments					
Develop City wide protocols for communication with media		/			

APPENDIX B: DEFERRED REPLACEMENTS

	Deferred FY09	Deferred FY10	Accumulated Deferred	Annual Replacement
			All Prior Years	After Catch-up
Operations				
Servers	\$410,000	\$360,000	\$1,150,000	\$150,000
Storage & Backup	\$100,000	\$200,000	\$400,000	\$250,000
Networks				
Switches/Routers	\$850,000	\$600,000	\$2,600,000	\$500,000
Fiber (10 year program)	\$1,500,000	\$1,500,000	\$4,500,000	\$1,500,000
PCs				
Desktop	\$624,000	\$724,000	\$1,400,000	\$1,000,000
		·		
Total	\$3,484,000	\$3.384,000	\$10,050,000	\$3,400,000

Note: Only two individual years are specified. Deferment of replacements had also occurred prior to FY08. Thus, the accumulated deferments are greater than the sum of FY09 and FY10. The total deferred cost must be appropriated and then the annual amounts going forward will cover continuing replacements.

APPENDIX C: ORGANIZATION CHART



